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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/841,981	04/25/2001	William Earl Sumner	10010871-1	5548

7590 06/03/2004

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

YIGDALL, MICHAEL J

ART UNIT PAPER NUMBER

2122

DATE MAILED: 06/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/841,981	Applicant(s) SUMNER ET AL.	
	Examiner Michael J. Yigdal	Art Unit 2122	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 April 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04/25/01</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-28 are pending and have been examined. The priority date considered for the application is April 25, 2001.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 2, 12, 13, 21 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Pat. No. 5,758,061 to Plum.

With respect to claim 1, Plum discloses a method of modifying a source code portion associated with a computer program (see column 5, line 39-44, which shows instrumenting the source code of a computer program), comprising the steps of:

(a) scanning said source code portion using a parser to recognize at least one select syntax structure therein, said parser having a predetermined code modification portion (see column 7, lines 1-9, which shows a parser for parsing the source code and analyzing its syntax, and column 9, lines 33-40, which further shows identifying structures in the code); and

(b) inserting an instrumentation code portion into said source code portion at a location associated with said select syntax structure based on said predetermined code modification portion of said parser (see column 7, lines 15-21, which shows inserting instrumentation code at

Art Unit: 2122

predetermined locations, and lines 26-36, which further shows that such locations are associated with certain language structures).

With respect to claim 2, Plum further discloses the limitation wherein said parser comprises a recursive-descent C language parser (see column 9, lines 50-66, which shows using a recursive-descent parser), and further wherein said computer program is a C language program selected from the group consisting of an operating system kernel, an application program and a software utility program (see column 5, lines 25-32, which shows operating on the source code of a computer program written in the C language).

With respect to claim 12, the recited system is analogous to the method recited in claim 1. See the explanation for claim 1 set forth above. Note that Plum further discloses such a system (see column 5, lines 12-24).

With respect to claim 13, the recited limitations are analogous to the limitations recited in claim 2. See the explanation for claim 2 set forth above.

With respect to claim 21, the recited computer-readable medium is analogous to the method recited in claim 1. See the explanation for claim 1 set forth above. Note that Plum further discloses such a computer-readable medium (see column 5, lines 12-24).

With respect to claim 22, the recited limitations are analogous to the limitations recited in claim 2. See the explanation for claim 2 set forth above.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3, 4, 7, 9, 10, 14, 16, 18, 19, 23, 26 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claims 2, 13 and 22 above, respectively, in view of U.S. Pat. No. 6,311,327 to O'Brien et al. (hereinafter "O'Brien").

With respect to claim 3, although Plum discloses additional processing performed prior to instrumenting the source code (see column 10, lines 42-46), Plum does not expressly disclose the step of pre-processing said source code portion.

However, O'Brien discloses a method for parsing and instrumenting source code (see column 3, line 48 to column 4, line 4) that comprises a pre-processor for removing information from the source code (see column 11, line 59 to column 12, line 5).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to add the pre-processing step taught by O'Brien to the method of Plum, for the purpose of removing information from the source code prior to instrumentation.

With respect to claim 4, the combination of Plum and O'Brien further discloses the limitation wherein said pre-processing step is operable to remove macro code portions from said source code portion (see Plum, column 10, lines 34-46, which shows that the additional

Art Unit: 2122

processing performed prior to instrumenting the source code relates to inline functions that are to be expanded, i.e. macros; see also O'Brien, column 11, line 59 to column 12, line 5, which shows that the information removed in the pre-processing step includes comments, which may comprise macro definitions).

With respect to claim 7, although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to count accesses to a particular function subroutine of said computer program.

However, O'Brien discloses a method for parsing and instrumenting source code (see column 3, line 48 to column 4, line 4) that is operable to count accesses to particular functions, for the purpose of analyzing performance (see column 20, lines 23-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to count accesses to particular functions, as taught by O'Brien, for the purpose of enabling performance analysis.

With respect to claim 9, although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to monitor frequency of function calls from a plurality of select locations in said computer program.

However, O'Brien discloses a method for parsing and instrumenting source code (see column 3, line 48 to column 4, line 4) that is operable to monitor the number of function calls and the average execution time of each function from a plurality of locations in the program, for the purpose of analyzing performance (see column 20, lines 23-39). The frequency of function calls may be determined based on the number of calls and the execution time.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to monitor the frequency of function calls, as taught by O'Brien, for the purpose of enabling performance analysis.

With respect to claim 10, although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to monitor frequency of use of a plurality of code paths in said computer program.

However, O'Brien discloses a method for parsing and instrumenting source code (see column 3, line 48 to column 4, line 4) that is operable to monitor branches, entry points and exit points, i.e. code paths, with associated time stamps (see column 21, lines 26-64).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to monitor the frequency of use of code paths, as taught by O'Brien, for the purpose of enabling performance analysis.

With respect to claim 14, the recited limitations are analogous to the limitations recited in claims 3 and 4. See the explanation for claims 3 and 4 set forth above.

With respect to claim 16, the recited limitations are analogous to the limitations recited in claim 7. See the explanation for claim 7 set forth above.

With respect to claim 18, the recited limitations are analogous to the limitations recited in claim 9. See the explanation for claim 9 set forth above.

With respect to claim 19, the recited limitations are analogous to the limitations recited in claim 10. See the explanation for claim 10 set forth above.

With respect to claim 23, the recited limitations are analogous to the limitations recited in claim 10. See the explanation for claim 10 set forth above.

With respect to claim 26, the recited limitations are analogous to the limitations recited in claim 7. See the explanation for claim 7 set forth above.

With respect to claim 28, the recited limitations are analogous to the limitations recited in claim 9. See the explanation for claim 9 set forth above.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claim 2 above, in view of U.S. Pat. No. 5,909,578 to Buzbee.

With respect to claim 5, although Plum discloses operating on the source code of a computer program (see column 5, lines 25-38), which may comprise an operating system kernel, Plum does not expressly disclose the limitation wherein said operating system kernel comprises HP-UX Operating System kernel.

However, Buzbee discloses a method for instrumenting source code to obtain profiling information (see column 5, lines 1-14), wherein the operating system kernel is the HP-UX OS (see column 3, lines 30-41).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the method of Plum with support for the HP-UX Operating System kernel, as taught by Buzbee, in order to increase its flexibility and compatibility.

7. Claims 6, 8, 15, 17, 25 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claims 2, 13 and 22 above, respectively, in view of U.S. Pat. No. 5,450,586 to Kuzara et al. (hereinafter "Kuzara").

With respect to claim 6, although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to count accesses to a particular global variable of said computer program.

However, Kuzara discloses a method for instrumenting source code with code markers in order to analyze and debug the software (see the title and abstract), wherein the code markers may be used to count events such as variable accesses (see column 9, lines 11-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to count accesses to variables and global variables, as taught by Kuzara, in order to facilitate debugging.

With respect to claim 8, although Plum discloses using the instrumentation code to determine the portions of the source code that have been reached during execution (see column 13, lines 15-40), Plum does not expressly disclose the limitation wherein said instrumentation code portion is operable to count accesses to a particular global variable from a select module of said computer program.

However, Kuzara discloses a method for instrumenting source code with code markers in order to analyze and debug the software (see the title and abstract), wherein the code markers may be used to determine when execution is in a particular module and to count events such as variable accesses (see column 9, lines 11-39).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to employ the method of Plum to count accesses to variables and global variables from particular modules, as taught by Kuzara, in order to facilitate debugging.

With respect to claim 15, the recited limitations are analogous to the limitations recited in claim 6. See the explanation for claim 6 set forth above.

With respect to claim 17, the recited limitations are analogous to the limitations recited in claim 8. See the explanation for claim 8 set forth above.

With respect to claim 25, the recited limitations are analogous to the limitations recited in claim 6. See the explanation for claim 6 set forth above.

With respect to claim 27, the recited limitations are analogous to the limitations recited in claim 8. See the explanation for claim 8 set forth above.

8. Claims 11, 20 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plum, as applied to claims 2, 13 and 22 above, respectively, in view of U.S. Pat. No. 6,327,699 to Larus et al. (hereinafter "Larus").

With respect to claim 11, although Plum discloses an exemplary computer system having a processor, Plum does not expressly disclose the limitation wherein said operating system kernel is operable with a multiprocessor computer system.

However, Larus discloses a method for instrumenting source code to produce a trace of executed paths (see column 2, lines 10-17) that is operable with a multiprocessor computer system (see column 3, lines 45-55).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the method of Plum with support for a multiprocessor computer system, as taught by Larus, in order to increase its flexibility and compatibility.

With respect to claim 20, the recited limitations are analogous to the limitations recited in claim 11. See the explanation for claim 11 set forth above.

With respect to claim 24, the recited limitations are analogous to the limitations recited in claim 11. See the explanation for claim 11 set forth above.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J. Yigdall whose telephone number is (703) 305-0352. The examiner can normally be reached on Monday through Friday from 7:30am to 4:00pm.

Art Unit: 2122

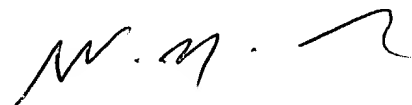
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (703) 305-4552. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MY

Michael J. Yigdall
Examiner
Art Unit 2122

mjy



WEI Y. ZHEN
PRIMARY PATENT EXAMINER